

# Work Order ID 106719

\*106719\*

Page 1

September-11-13 11:34:20 AM

Item ID: D6104-011 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: 17-4 SS Roundbar 6.50"OD  
 Start Date: 9/13/13 Start Qty: 10.00 \*10\* Cust Item ID:  
 Required Date: 9/13/13 Req'd Qty: 10.00 \*10\* Customer:  
 Reference:

Approvals: Process Plan: MCS Date: 13-09-12 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6104	Rev B								
100	PURCHASING	0.00							
*100*									
Purchasing	Memo	0.00							
Purchasing	Issue P/O: <u>21461</u> a)Description: S.S round billet b) Ø6.50" x 4.100" longc) Tolerance on all dimensions are +0.030"/-0.000"d) Material: 17-4PH Stainless steele) Min UTS = 170 KSI (38 HRc) Material certification required								<u>CZ 13/09/23 (10)</u>
110	Receive & Inspect for Damage & Mat'l Certs	0.00							
*110*									
Packaging	Memo	0.00							
Packaging	Ensure material certification is attached								<u>10X</u> <u>8D</u> <u>13-10-11</u>
120	QC6- Inspect dimensions to drawing	0.00							
*120*									
QC	Memo	0.00							
Quality Control	Ensure Material certification comply to Dwg D6104								<u>OK 13/10/13</u> <u>10</u>

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input type="checkbox"/>									
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions
---	---	---

<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other	
--	---	--

# Work Order ID 106719

\*106719\*

Page 2

September-11-13 11:34:20 AM

Item ID: D6104-011 Accept \*N900040100\* Setup Start \*NS1\*  
Revision ID: Stop \*NS2\*  
Item Name: 17-4 SS Roundbar 6.50"OD  
Start Date: 9/13/13 Start Qty: 10.00 \*10\* Cust Item ID:  
Required Date: 9/13/13 Req'd Qty: 10.00 \*10\* Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location: <i>MAT 43</i>	0.00							
*130*									
Packaging	Memo	0.00				<i>10</i>	<i>0</i>		
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
*140*									
QC	Memo	0.00							
Quality Control									

*13-10-15*

*13-10-15*

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input type="checkbox"/>									
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions
---	---	---

<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other	
--	---	--

# Picklist Print

September-11-13 11:34:19 AM

Page 1

Work Order ID: 106719

Parent Item: D6104-011

Parent Item Name: 17-4 SS Roundbar 6.50"OD

Start Date: 9/13/13

Required Date: 9/13/13

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP A02.12.02New Issue KJ/RF

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6104-011P 17-4 SS Roundbar 6.50"Od		Purchased	No			110	Each	0.0000	1	10			

10x SPB-10-11

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____				<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>					
<b>Root Cause</b>	<b>Date</b>	<b>Step</b>	<b>Qty</b>	<b>Description of work order update or Non-conformance</b>	<b>Initial Chief Eng</b>	<b>Action Description</b>	<b>Sign &amp; Date</b>	<b>Verification</b>	<b>QC Inspector</b>		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY												
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other	

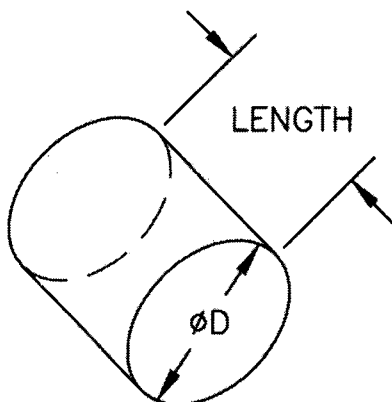


DESIGN <i>RT</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4	SCALE NTS
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED

02.11.29 *[Signature]*

## SPECIFICATION CONTROL DRAWING



106719 MGS  
13-09-12  
UNCLAS  
SECRET

MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRc)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

Copyright © 2001 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

45

Ship From: **THYSSENKRUPP MATERIALS NA**  
 2821 LANGSTAFF ROAD  
 CONCORD, ONTARIO L4K 5C6  
 Tel: 905 669 9444 Fax: 905-738-9033

No: PEC 844749  
 Ship Date 09Oct13 at 14:11 From PFW  
 Probill  
 Via VIM TRANSFER  
 FOB CONCORD  
 Frt PREPAID  
 Route 0- 0 Manifest  
 Vhcle Trailer  
 Slp STAN IVERS (905-532-1350)  
 Sold To: ( 20115)  
 DART AEROSPACE  
 1270 ABERDEEN ST  
 HAWKESBURY, ON K6A 1K7

Ship To: ( 1)  
 DART AEROSPACE  
 1270 ABERDEEN ST  
 HAWKESBURY, ON K6A 1K7  
 Tel: 613-632-9577 Fax: 613-632-1053

B I L L O F L A D I N G

1) Our Order PEC-608727- 1 Your PO # 21461  
 Part # D6103-003 Rel #

ALUMINUM ROUND BAR 7075T7351  
 3.50" DIA X 12.5000"

Heat Number	Tag No	Quantity	PCS	Wt LBS
MA013004215	224665	20 '10.0000"	20	244

MTR

2) Our Order PEC-608727- 2 Your PO # 21461  
 ALUMINUM PLATE 7075-T651

2.00" THICK X 3.5000" X 51.0000"

Heat Number	Tag No	Quantity	PCS	Wt LBS
437541	224667	3.72 SFT	3	115

MTR

3) Our Order PEC-608727- 3 Your PO # 21461  
 Part # D6104-011 Rel #

STAINLESS STEEL ROUND BAR 17-4 STAINLESS  
 6.50" DIA X 4.1000"

Heat Number	Tag No	Quantity	PCS	Wt LBS
425963	224668	3 ' 5.0000"	10	410

MTR

TOTAL:	Tags	PCS	LBS
	3	33	769

MILL TEST REPORTS, PACKING SLIPS ARE TO SENT  
 WITH MATERIAL AND FAXED TO THE CUSTOMER PRIOR  
 TO SHIPPING.

ATTN: CHANTAL/LINDA

\*\* ALL PACKING SLIPS MUST HAVE THE HEAT NUMBER \*\*

Page: 1 ....Continued

SP13-10-11

OK. RECEIVED

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ÊTRE  
 RAPPORTÉES IMMÉDIATEMENT  
 ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY  
 RETOUR DE MARCHANDISES AVEC NOTRE NUMÉRO D'APPROBATION SEULEMENT  
 MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER

*Handwritten Signature*

REÇU EN BONNE CONDITIONS / RECEIVED IN GOOD CONDITION

DATE



SHIP FROM:  
THYSSENKRUPP MATERIALS NA  
2821 LANGSTAFF ROAD  
CONCORD, ONTARIO L4K 5C6  
Tel: 905 669 9444 Fax: 905-738-9033

Ship To: ( 1 )  
DART AEROSPACE

B I L L O F L A D I N G  
No: PEC 844749  
Ship Date 09Oct13 at 14:11 From PFW  
Probill  
Via VIM TRANSFER  
FOB CONCORD  
Frt PREPAID  
Route 0- 0 Manifest  
Vhcle Trailer  
Slp STAN IVERS (905-532-1350)  
Sold To: ( 20115 )  
DART AEROSPACE

===== B I L L O F L A D I N G =====  
\*\* REFERENCED ON IT \*\*

TOTAL OF 3 SKIDS GR.W. 844 LBS

\*CUSTOMER PICK-UP HRS AT THYSSENKRUPP MATERIALS NA  
CONCORD, ONT.\* \*\*\* 9:00 AM TO 4:00 PM \*\*\*  
\*\*\*\* TEL. 800-926-2600 \*\*\*\*

\*\*\*\*\*  
\* WE STOCK STAINLESS STEEL \*  
\* PLEASE LET US QUOTE YOUR NEXT REQUIREMENT \*  
\*\*\*\*\*  
\*\*\*PLEASE NOTE A \$25.00 ENERGY SURCHARGE WILL BE  
ADDED TO EVERY ORDER.\*\*\*

Page: 2 .... Last

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ETRE  
RAPPORTEES IMMEDIATEMENT  
ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY  
RETOUR DE MARCHANDISES AVEC NOTRE NUMERO D'APPROBATION SEULEMENT  
MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER

# Certified Inspection Report

08/7/13  
00:25:11

Alcoa Inc.  
Massena Operations  
Park Avenue East, Massena, NY 13662



Customer **Copper Brass Sales** Customer P.O. No. **5400189486** Customer Part No. **(ALRD00373)** Alcoa Order No. **MMC-A8137-070** Govt. Contract No.

Ship To **Copper Brass Sales**  
**800 Arlington Blvd. Suite**  
**Swedesboro, NJ 08085**

We hereby certify that the material covered in this report has been inspected in accordance with, and has been found to meet the applicable requirements described herein, including any specifications forming a part of the description, or as previously agreed to with customer and that samples representative of the material met the composition limits and have the mechanical properties shown on the face of this sheet. Manufactured under an ISO/TS 16949 registered quality management system. Melted and manufactured in the USA.

*James E. Samuel II*  
James E. Samuel II, Quality Assurance Manager

Date Shipped **08/16/13** Weight Shipped **1,964 lbs** Product **CFRB-CF ROD** Specific Length **BOL 000161359**  
Alloy - Temper **7075-T7351** Size **3.50000 IN** Shape **DIA** Config **12 FT** QRR

## Specifications:

AMS 4124E  
ASTM B211-12E1  
Material conforms to T73 requirements  
Minimum mechanical properties to apply:  
68 KSI Tensile Strength  
56 KSI Yield Strength  
10% Elongation  
QQA-225/9E (Except Size)  
AMS-QQA-225/9 (Except Size)

Product produced and marked to the requirements of AMS-QQ-A-225/9 also meets the requirements of QQ-A-225/9.  
Product produced and marked to the requirements of QQ-A-225/9 also meets the requirements of AMS-QQ-A-225/9.

TEST REQUIREMENTS	Test U.T.S.	Test T.Y.S.	Test %Elong	Test Cond	Test	Test	Test	Test	Test	Test
Max:		67.9								
Min:	68.0	56.0	10.0	38.0						

Test Results	Test U.T.S.	Test T.Y.S.	Test %Elong	Test Cond	Test	Test	Test	Test	Test	Test
Lot / Work Order										
MA013004215	1									
Max:	73.6	63.6	15.5	40.5						
Min:	73.6	63.6	15.5	40.5						

## TEST ABBREVIATIONS

U.T.S. Ultimate Tensile Strength KSI  
Cond Conductivity % IACS

T.Y.S. Tensile Yield Strength KSI

%Elong Elongation % in 2"

## Aluminum Association Chemical Composition Limits (In Weight %)

ALLOY	MAX	%SI	%FE	%CU	%MN	%MG	%CR	%ZN	%TI	%Others	%Others	%AL			
7075	MIN	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.15	Rem			
				1.2		2.1	0.18	5.1		Each	Total				

## Actual Started Chemistry

LOT/WORK ORDER	MAX	%SI	%FE	%CU	%MN	%MG	%CR	%ZN	%TI	%OE	%OT	%AL			
MA013004215	MIN	0.06	0.15	1.7	0.03	2.6	0.20	6.0	0.02	LT 0.05	LT 0.15	Rem			
		0.05	0.14	1.6	0.03	2.5	0.19	5.8	0.02						

From: ThyssenKrupp Materials NA

Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2402715926

CstAr CstOr 252175

Wgt.: 244.213 LB Date 09/25/2013

*John L. Zambetti*

# Certified Inspection Report

08/17/13  
00:25:11

Alcoa Inc.  
Massena Operations  
Park Avenue East, Massena, NY 13662



Customer <b>Copper Brass Sales</b>	Customer P.O. No. <b>5400189486</b>	Customer Part No. <b>(ALRD00373)</b>	Alcoa Order No. <b>MMC-A8137- -070</b>	Govt. Contract No.
---------------------------------------	--	---	---	--------------------

## NOTES:

Mercury is not a normal contaminant in aluminum alloys and neither it nor any of its compounds are used in the manufacture of our product.  
This alloy meets the requirements of EU 2011/65/EC (RoHS) and EU 2000/53/EC for lead, mercury, cadmium and hexavalent chromium.

From: ThyssenKrupp Materials NA

Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2402715926

CstAr CstOr 252175

Wgt.: 244.213 LB Date 09/25/2013

Page 2

A handwritten signature in black ink, reading "John R. Zambetti", enclosed within a rectangular border.

**COPPER AND BRASS SALES****MATERIAL TYPE****ALUMINIUM ALLOYS****PRODUCT DESIGNATION****2014 2024 2224 2324 7050 7075 7150 7175 7475 ALUMEC 89 ALUMEC 99 QC-7****"WARNING"**

SMALL CHIPS, FINE TURNINGS AND DUST MAY IGNITE READILY. EXPLOSION POTENTIAL MAY BE PRESENT WHEN: DUST OR FINES ARE DISPERSED IN THE AIR; FINE, DUST OR MOLTEN ALUMINUM ARE IN CONTACT WITH CERTAIN METAL OXIDES; OR, CHIPS, FINES, DUST OR MOLTEN ALUMINUM ARE IN CONTACT WITH WATER OR MOISTURE. KEEP AWAY FROM IGNITION SOURCE. USE EXPLOSION-PROOF VENTILATION. KEEP MATERIAL DRY.

THIS PRODUCT CONTAINS BERYLLIUM AND COPPER. INHALING BERYLLIUM DUST OR FUMES MAY CAUSE CHRONIC BERYLLIUM DISEASE (CBD), A SERIOUS CHRONIC LUNG DISEASE IN SOME INDIVIDUALS. BERYLLIUM IS A CANCER HAZARD; OVER TIME CBD AND CANCER CAN BE FATAL. TARGET ORGAN IS PRIMARILY THE LUNG. INHALING LARGE AMOUNTS OF COPPER, MAGNESIUM OXIDE, MANGANESE OXIDE, AND ZINC OXIDE FUMES OR DUST MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS. CHRONIC OVEREXPOSURE TO COPPER MAY CAUSE THICKENING OF THE SKIN; AND SKIN, TEETH, AND HAIR DISCOLORATION. CHRONIC OVEREXPOSURE TO MANGANESE DUST CAN CAUSE CENTRAL NERVOUS SYSTEM DAMAGE, SCARRING OF THE LUNGS AND REPRODUCTIVE HARM IN MALES. TARGET ORGAN IS PRIMARILY THE LUNG, BUT REPEATED HIGH EXPOSURE CAN ALSO AFFECT THE LIVER. CHRONIC OVEREXPOSURE TO IRON OXIDE DUST/FUME MAY CAUSE LUNG SIDEROSIS. CHRONIC OVEREXPOSURE TO SILICON DUST CAN CAUSE CHRONIC BRONCHITIS. OVEREXPOSURE TO AMORPHOUS SILICA CAN CAUSE DRYING OF THE MUCOUS MEMBRANES OF THE EYES, NOSE, AND THROAT.

THIS PRODUCT ALSO CONTAINS NICKEL AND CHROMIUM COMPOUNDS. INHALATION OF NICKEL DUST OR FUME MAY RESULT IN INFLAMMATION OF THE RESPIRATORY TRACT AND CAUSE NASAL AND/OR LUNG CANCER. NICKEL HAS BEEN IDENTIFIED AS A POTENTIAL HUMAN CARCINOGEN. EXPOSURE TO CHROMIUM DUST OR FUMES MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS AND KIDNEY AND LIVER DAMAGE. UNDER HIGH TEMPERATURES, HEXAVALENT CHROMIUM MAY BE PRODUCED. IF IN THE INSOLUBLE FORM, IT IS A CONFIRMED HUMAN CARCINOGEN. (CALIFORNIA PROPOSITION 65).

IF COATED WITH OIL, MAY CAUSE SKIN IRRITATION/DERMATITIS BY CONTACT. WELDING FUME IS LISTED AS A POSSIBLE CARCINOGENIC TO HUMANS.

READ THE ALUMINIUM/ALUMINIUM ALLOYS MATERIAL SAFETY DATA SHEET (MSDS) ON FILE WITH YOUR EMPLOYER BEFORE WORKING WITH THIS MATERIAL.

\* If processing or recycling produces particulate, use exhaust ventilation or other controls designed to prevent exposure to workers. Examples of such activities include melting, welding, grinding, abrasive sawing, sanding and polishing. Any activity which abrades the surface of this material can generate airborne particulate. Use appropriate NIOSH approved respiratory protection (P95; P100 for lead with, quantitative fit testing required) if exposures exceed the permissible limits.

\* The Occupational Safety and Health Administration (OSHA) have set mandatory limits on occupational exposures.

\* Aluminum, in solid form and as contained in finished products presents no special health risk.

\* Sold for manufacturing purposes only. This product can be recycled; contact your sales representative.

For additional information, call or write to Copper and Brass Sales, 22355 West Eleven Mile Road, Southfield, MI 48033, telephone 248-233-5600, or visit our web site @ [www.copperandbrass.com](http://www.copperandbrass.com).

ALUMINUM LABEL NO. 300-1056

ISSUED 10/01/2008



**CERTIFIED TEST REPORT**  
Constellium Rolled Products Ravenswood, LLC

2

COPPER & BRASS SALES  
1015 SAINT JEROME STREET  
MISHAWAKA IN  
46544

COPPER & BRASS SALES  
P.O. BOX 5116  
SOUTHFIELD MI  
48086

COPPER&BR T84303 4075 INCLUSION SERIAL#: 20130820T84303 PAGE 1 OF 3

CUSTOMER PURCHASE ORDER NO. & ITEM 5400189756				Constellium ORDER NO. 110-513235		<b>CERTIFICATION</b> "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination."  Constellium Rolled Products Ravenswood, LLC Rt 2 South, Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA  <i>Rodney J. Felty</i> Rodney J. Felty - Laboratory Manager
ALLOY 7075	CLAD. 00	TEMPER T651	GAUGE 2.03000	WIDTH 60.500	LENGTH 144.500	
ITEM ORDERED MOLD PLATE-DIST GE SPEC PLATE, SAWED MILL						
CUSTOMER SPECIFICATION AMS-QQ-A-250/12						
PART NUMBER ALFLR00999		B/L NUMBER T84300		DATE SHIPPED 08/21/13		
WEIGHT SHIPPED 7,540		NO. OF PIECES 4		GOVT. CONTRACT NO.		

LOT NUMBER	TEST DIRECTION	NO. OF TESTS	ULTIMATE STRENGTH K.S.I.		YIELD STRENGTH K.S.I.		ELONGATION %		COND % IACS	
			MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN	MAX
437541	LT	2	***** T651 80.1	80.8	68.7	69.6	***** 13.0	13.0		
All material contained in lot 437541 was cast and manufactured in the USA.										
-----										
ALL LOTS ON THIS CERTIFICATION ALSO CONFORM TO THE FOLLOWING REQUIREMENTS										
-----										
ASTM B209-10,AMS 4045K										

P-860-155D (06/11)

From: ThyssenKrupp Materials NA

Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2402716201

CstAr

CstOr 252175

Wgt.: 115.000 LB

Date 09/25/2013

*John R. Zambetti*



**CERTIFIED TEST REPORT**  
Constellium Rolled Products Ravenswood, LLC

COPPER & BRASS SALES  
1015 SAINT JEROME STREET  
MISHAWAKA IN

46544

COPPER & BRASS SALES  
P.O. BOX 5116  
SOUTHFIELD MI

48086

COPPER&BR T84303 4075 INCLUSION SERIAL#: 20130820T84303 PAGE 2 OF 3

CUSTOMER PURCHASE ORDER NO. & ITEM 5400189756				Constellium ORDER NO. 110-513235	
ALLOY 7075	CLAD. 00	TEMPER T651	GAUGE 2.03000	WIDTH 60.500	LENGTH 144.500
ITEM ORDERED MOLD PLATE-DIST GE SPEC PLATE, SAWED MILL					
CUSTOMER SPECIFICATION AMS-QQ-A-250/12					
PART NUMBER ALFLR00999		B/L NUMBER T84300		DATE SHIPPED 08/21/13	
WEIGHT SHIPPED 7,540		NO. OF PIECES 4		GOVT. CONTRACT NO.	

**CERTIFICATION**

"Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination."

Constellium Rolled Products Ravenswood, LLC  
Rt 2 South Century Road  
P.O. BOX 68  
RAVENSWOOD, WV 26164 USA

*Rodney J. Felty*  
Rodney J. Felty - Laboratory Manager

LOT NUMBER	TEST DIRECTION	NO. OF TESTS	ULTIMATE STRENGTH K.S.I.		YIELD STRENGTH K.S.I.		ELONGATION %		COND % IACS			
			MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN	MAX		
437541	C		ACTUAL CHEMICAL COMPOSITION									
			SI= 0.08	FE= 0.16	CU= 1.42	MN= 0.04	MG= 2.48					
			CR= 0.21	ZN= 5.59	TI= 0.02	ZR= 0.01						
			OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER									

P-880-1550 (06/11)

From: ThyssenKrupp Materials NA

Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2402716201

CstAr

CstOr 252175

Wgt.: 115.000 LB

Date 09/25/2013

*John J. Zambetti*



# CERTIFIED TEST REPORT

Constellium Rolled Products Ravenswood, LLC

COPPER & BRASS SALES  
1015 SAINT JEROME STREET  
MISHAWAKA IN

46544

COPPER & BRASS SALES  
P.O. BOX 5116  
SOUTHFIELD MI

48086

COPPER&BR T84303 4075 INCLUSION SERIAL#: 20130820T84303 PAGE 3 OF 3

CUSTOMER PURCHASE ORDER NO. & ITEM 5400189756				Constellium ORDER NO. 110-513235		CERTIFICATION	
ALLOY 7075	CLAD. 00	TEMPER T651	GAUGE 2.03000	WIDTH 60.500	LENGTH 144.500	<p>"Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination."</p> <p><b>Constellium Rolled Products Ravenswood, LLC</b> Rt 2 South, Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA</p> <p><i>Rodney J. Felty</i> Rodney J. Felty - Laboratory Manager</p>	
ITEM ORDERED MOLD PLATE-DIST GE SPEC PLATE, SAWED MILL							
CUSTOMER SPECIFICATION AMS-QQ-A-250/12							
PART NUMBER ALFLR00999		B/L NUMBER T84300		DATE SHIPPED 08/21/13			
WEIGHT SHIPPED 7,540		NO. OF PIECES 4		GOVT. CONTRACT NO.			

LOT NUMBER	TEST DIRECTION	NO. OF TESTS	ULTIMATE STRENGTH K.S.I.		YIELD STRENGTH K.S.I.		ELONGATION %		COND % IACS											
			MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.										
THIS TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE LABORATORY OR AUTHORIZED QUALITY DELEGATE. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW.																				
CHEMISTRY BY OES: ARKSPARK																				
CHEMISTRIES REPORTED IN PERCENTAGE BY WEIGHT.																				
WHEN FRACTURE TOUGHNESS TEST REQUIRED, TESTED PER ASTM E399.																				
WHEN TENSILE TEST REQUIRED, TESTED PER ASTM E8; B557.																				
Mark Paperwork: ALFLR00999																				
DUNS Number: 090570149; CAGE Code: 1YWL9																				
Mercury is not a normal contaminant in aluminum alloys and neither mercury nor any of its compounds were utilized in the manufacture of our product.																				
"END OF CERTIFICATION"																				
CHEM COMP	ALLOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		ZINC		TITANIUM		OTHERS		
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	EACH MAX.	TOTAL MAX.	
	SEE ACTUAL CHEMICAL COMPOSITION																			
ALUMINUM REMAINDER																				

P-860-155D (06/11)

From: ThyssenKrupp Materials NA

Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2402716201

CstAr

CstOr 252175

Wgt.: 115.000 LB

Date 09/25/2013

*John L. Zambetti*

**COPPER AND BRASS SALES**

MATERIAL TYPE

ALUMINIUM ALLOYS

PRODUCT DESIGNATION

2014 2024 2224 2324 7050 7075 7150 7175 7475 ALUMEC 89 ALUMEC 99 QC-7

**"WARNING"**

SMALL CHIPS, FINE TURNINGS AND DUST MAY IGNITE READILY. EXPLOSION POTENTIAL MAY BE PRESENT WHEN: DUST OR FINES ARE DISPERSED IN THE AIR; FINE, DUST OR MOLTEN ALUMINUM ARE IN CONTACT WITH CERTAIN METAL OXIDES; OR, CHIPS, FINES, DUST OR MOLTEN ALUMINUM ARE IN CONTACT WITH WATER OR MOISTURE. KEEP AWAY FROM IGNITION SOURCE. USE EXPLOSION-PROOF VENTILATION. KEEP MATERIAL DRY.

THIS PRODUCT CONTAINS BERYLLIUM AND COPPER. INHALING BERYLLIUM DUST OR FUMES MAY CAUSE CHRONIC BERYLLIUM DISEASE (CBD), A SERIOUS CHRONIC LUNG DISEASE IN SOME INDIVIDUALS. BERYLLIUM IS A CANCER HAZARD; OVER TIME CBD AND CANCER CAN BE FATAL. TARGET ORGAN IS PRIMARILY THE LUNG. INHALING LARGE AMOUNTS OF COPPER, MAGNESIUM OXIDE, MANGANESE OXIDE, AND ZINC OXIDE FUMES OR DUST MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS. CHRONIC OVEREXPOSURE TO COPPER MAY CAUSE THICKENING OF THE SKIN; AND SKIN, TEETH, AND HAIR DISCOLORATION. CHRONIC OVEREXPOSURE TO MANGANESE DUST CAN CAUSE CENTRAL NERVOUS SYSTEM DAMAGE, SCARRING OF THE LUNGS AND REPRODUCTIVE HARM IN MALES. TARGET ORGAN IS PRIMARILY THE LUNG, BUT REPEATED HIGH EXPOSURE CAN ALSO AFFECT THE LIVER. CHRONIC OVEREXPOSURE TO IRON OXIDE DUST/FUME MAY CAUSE LUNG SIDEROSIS. CHRONIC OVEREXPOSURE TO SILICON DUST CAN CAUSE CHRONIC BRONCHITIS. OVEREXPOSURE TO AMORPHOUS SILICA CAN CAUSE DRYING OF THE MUCOUS MEMBRANES OF THE EYES, NOSE, AND THROAT.

THIS PRODUCT ALSO CONTAINS NICKEL AND CHROMIUM COMPOUNDS. INHALATION OF NICKEL DUST OR FUME MAY RESULT IN INFLAMMATION OF THE RESPIRATORY TRACT AND CAUSE NASAL AND/OR LUNG CANCER. NICKEL HAS BEEN IDENTIFIED AS A POTENTIAL HUMAN CARCINOGEN. EXPOSURE TO CHROMIUM DUST OR FUMES MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS AND KIDNEY AND LIVER DAMAGE. UNDER HIGH TEMPERATURES, HEXAVALENT CHROMIUM MAY BE PRODUCED. IF IN THE INSOLUBLE FORM, IT IS A CONFIRMED HUMAN CARCINOGEN. (CALIFORNIA PROPOSITION 65).

IF COATED WITH OIL, MAY CAUSE SKIN IRRITATION/DERMATITIS BY CONTACT. WELDING FUME IS LISTED AS A POSSIBLE CARCINOGENIC TO HUMANS.

READ THE ALUMINIUM/ALUMINIUM ALLOYS MATERIAL SAFETY DATA SHEET (MSDS) ON FILE WITH YOUR EMPLOYER BEFORE WORKING WITH THIS MATERIAL.

\* If processing or recycling produces particulate, use exhaust ventilation or other controls designed to prevent exposure to workers. Examples of such activities include melting, welding, grinding, abrasive sawing, sanding and polishing. Any activity which abrades the surface of this material can generate airborne particulate. Use appropriate NIOSH approved respiratory protection (P95; P100 for lead with, quantitative fit testing required) if exposures exceed the permissible limits.

\* The Occupational Safety and Health Administration (OSHA) have set mandatory limits on occupational exposures.

\* Aluminum, in solid form and as contained in finished products presents no special health risk.

\* Sold for manufacturing purposes only. This product can be recycled; contact your sales representative.

For additional information, call or write to Copper and Brass Sales, 22355 West Eleven Mile Road, Southfield, MI 48033, telephone 248-233-5600, or visit our web site @ [www.copperandbrass.com](http://www.copperandbrass.com).

ALUMINUM LABEL NO. 300-1056

ISSUED 10/01/2008



**VALBRUNA**SLATER STAINLESS, INC.  
2400 TAYLOR STREET WEST - PO BOX 630  
FORT WAYNE IN 46802 USA  
PHONE 260.434.2800 - FAX 260.434.2801**Product Certification Report**Report Number: **4915460**

Certified on Sep 13, 2013 Page 1 of 2

Order I.D. <b>1302074 002</b>		Order Date <b>8/29/13</b>		Commodity Code <b>SSRD00137</b>	
Dim 1 <b>6.5000</b>	Dim 2 <b>.0000</b>	Dim 3 <b>.0000</b>	Heat I.D. <b>425963</b>	Customer I.D. <b>002558</b>	Customer Purchase Order <b>5400195734-TX</b>
Product Shape <b>Rounds</b>			Product Surface <b>HR &amp; Rough Turned</b>		Customer Grade <b>630</b>
Length (Inches) <b>120.000 Min. 168.000 Max.</b>			Bill of Lading # <b>420150</b>	Weight	

**Ship To****COPPER AND BRASS SALES**  
12321 Cutten Road  
HOUSTON, TX 77041**Sold To****VALBRUNA STAINLESS, INC.**  
2400 TAYLOR STREET WEST  
FORT WAYNE, IN 46802**Lifts: 0030 0031**

AISI 630

Condition A

ASTM F899-12b

ASTMA 564-13

ASMESA 564 10 ED 2011a add.

AMS 2303F

AMS 5643S (except finish)

**CHEMICAL ANALYSIS**

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.035	.70	.028	.022	.45	15.97	4.40	.26	3.32	.03	.26	.000	.259

**BRINELL HARDNESS ASTM E10-12**

HBW

358

**TENSILE PROPERTIES ASTM E8-13a****CAPABILITY**

Cap HB	TS (PSI)	.2%YS (PSI)	%EL(4d)	%RA	AGE(F)
403	194600	171000	18.1	48.5	900

**MAGNETIC PARTICLE TEST AMS2303**

FREQ SEV

AVG .00 .00

**PRODUCTION HEAT TREATMENT**

SOL-ANN(F)	SOL-ANN(HR)	QUENCH
1900	10.00	Air

**MACRO ASTM E340-00/E381-01**

MACRO

OK

OK

OK

**PERCENT FERRITE (AMS 2315)**

% FERRITE	Etchant	Magnification X
AVG 2.0	Marbles	100

Free of mercury and low melting alloy contamination.

MAXX stainless.

Electric Furnace melted; AOD refined.

Reduction ratio exceeds 5 To 1.

Material is RoHS compliant.

Chemical testing to one or more of the listed ASTM methods:

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

*Dennis Hackett*

email: DHackett@valbruna.us

Dennis Hackett

From: ThyssenKrupp Materials NA

Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2402716134

CstAr

CstOr 252175

Wgt.: 410.000 LB

Date 09/30/2013

*John L. Zambetti*

**VALBRUNA**SLATER STAINLESS, INC.  
2400 TAYLOR STREET WEST - PO BOX 630  
FORT WAYNE IN 46802 USA  
PHONE 260.434.2800 - FAX 260.434.2801**Product Certification Report**Report Number: **4915460**

Certified on Sep 13, 2013 Page 2 of 2

Order I.D. <b>1302074 002</b>		Order Date <b>8/29/13</b>		Commodity Code <b>SSRD00137</b>	
Dim 1 <b>6.5000</b>	Dim 2 <b>.0000</b>	Dim 3 <b>.0000</b>	Heat I.D. <b>425963</b>	Customer I.D. <b>002558</b>	Customer Purchase Order <b>5400195734-TX</b>
Product Shape <b>Rounds</b>			Product Surface <b>HR &amp; Rough Turned</b>		Customer Grade <b>630</b>
Length (Inches) <b>120.000 Min. 168.000 Max.</b>			Bill of Lading # <b>420150</b>	Weight	

**Ship  
To****COPPER AND BRASS SALES  
12321 Cutten Road  
HOUSTON, TX 77041****Sold  
To****VALBRUNA STAINLESS, INC.  
2400 TAYLOR STREET WEST  
FORT WAYNE, IN 46802***conf 13/10/13*

E415-08, E572-02a, E1019-11, E1085-95, E1086-08.  
 Location of tensile fracture: inside middle of gage length.  
 Chemical Analysis performed at Acciaierie Valbruna, Italy.  
 No mercury or low melting alloy contamination. No weld repair.  
 Material melted in Italy, manufactured in the United States.  
 Material conforms to listed specifications and is DFARS compliant.  
Quality system is compliant with ISO 9001:2008. Produced in accordance with EN 10204 3.1.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

*Dennis Hackett*email: [DHackett@valbruna.us](mailto:DHackett@valbruna.us)

Dennis Hackett

From: ThyssenKrupp Materials NA

Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2402716134

CstAr

CstOr 252175

Wgt.: 410.000 LB

Date 09/30/2013

*John J. Zambetti*

Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO21461**

Purchase Order Date 9/23/2013

PO Print Date 9/24/2013

Page Number 2 of 2

Order From : VC-COP001  
THYSSENKRUPP MATERIALS CA LTD  
O/A VPK METAL- C/O T27540/PO BOX 4275,POSTAL"A"  
TORONTO, ON M5W 5V8  
CA

Ship To : DART AEROSPACE LTD  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

Contact Name  
Vendor Phone 905 669 9444

Ship To Contact  
Ship To Phone  
Ship Via: Yours ppd  
Ship Aect:

Buyer Chantal Lavoie  
Customer POID  
Customer Tax # 10127-2607  
Terms Net 30  
Currency CAD  
FOB FCA -- (Free Carrier)

3 D6104-011P

17-4 SS Roundbar 6.50"Od

9/30/2013

Yes

9/30/2013

10.00  
Each

\$136.00

\$1,360.00

AS PER DWG D6104 REV. B  
B106719

Line Total:

\$1,360.00

PO Total:

\$3,027.7

Note: Pricing listed above is as per contract agreement between Dart Aerospace and the respective manufacturer.  
No substitution or deviation without consent.  
Certificate of Conformity or Material Certification required ☒ YES ☐ NO  
PST# 6122-5207

Change Nbr:

2

Change Date: 9/24/2013